

# *U.S. Antarctic Marine Living Resources Program*

## *2011-2012 Weekly Field Reports*

### *Cape Shirreff, Livingston Island*

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The U.S. AMLR field camp at Cape Shirreff was closed on March 1, 2012, bringing an end to the season that began on November 10, 2011. After a 24 hour weather delay, the R/V *Laurence M. Gould* approached the cape around 4 AM to anchor. The weather conditions were extremely favorable with a 3-4 foot sea swell and winds under 10 knots (along with a healthy dose of rain). Two zodiacs were launched around 06:45. IT-electronics technicians from the *L.M. Gould* arrived on the first zodiac and provided valuable assistance breaking down VHF and HF communications systems at the camp.

In all, 10 crew members (including 4 zodiac operators) came ashore to assist in moving gear. Approximately three zodiac loads of food and propane were delivered to the cape to stock for the 2012/13 field season, and seven zodiac loads of personnel, samples, gear, retrograde equipment, and trash were removed from the island. All items were successfully transported from the island, including the ATV which needs service and repair. The last zodiac was aboard the ship around 10 AM.

All AMLR personnel, Kevin Pietrzak, McKenzie Mudge, Nicole Cook, Jay Wright and camp leader, Doug Krause, left the island and are now on board the *L.M. Gould*.

We would like to extend a heartfelt thanks to the Captain and crew of the R/V *Laurence M. Gould* and USAP support staff for a safe and efficient camp closing.

#### **Science Report**

##### Seabirds

1. Chinstrap chicks have nearly finished fledging and on 25 February we finished the study of fledgling weights. In total, we weighed 276 fledglings. The average fledgling mass was 3179g. This is less than 1% different from the previous 15-year mean.
2. Of the nineteen pairs of brown skuas that we monitored, we have completed measurements on 7 territories, 1 nest remains active, and 12 nests have failed. We finished the collection of 48-day measurements of brown skua chicks on 29 February. We collect weights and morphometric measurements at 48 days of age to determine their sex and to assess their condition.



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3. We conducted the annual chinstrap penguin carcass count on 27 February. We searched all of the beaches on the northern and eastern sides of Cape Shirreff and counted all the carcasses encountered. We counted 96 carcasses (51 adults, 33 chicks and 12 unidentified). Leopard seal predation was identified as the main source of mortality and one of the carcasses was an Adelie fledgling. Due to the relatively early timing of camp closure, not all chicks had fledged when the carcass count was conducted.
4. We found a dead cattle egret when we visited Punta Oeste to check skua territories on 1 March. The bird was never observed alive and the timing of death is unknown, however, the carcass looked old and could have died in a previous year. Nonetheless it was a surprise to stumble across.
5. A significant portion of the week was spent compiling and proofing data, along with closing camp tasks.

#### Pinnipeds

6. Of the original 30 CCAMLR attendance Antarctic fur seal females, 12 had a surviving pup at the conclusion of the study.
7. Twenty-five of the thirty attendance study females completed at least six trips to sea before they lost their pup. Of the 12 females with pups at the end of the season, two had completed 16 trips.
8. We concluded monitoring our adult tagged female population and mother pup pairs to get a measure of reproductive success and loss of pups due to leopard seal predation. Our estimate for pup loss to leopard seal predation up to 21 February was 56.7%.
9. Systematic surveys of defined areas of the Cape for the 500 per annum fur seals tagged as pups were finished this week. Return percentages of animals from recent cohorts are as follows: 2008/09 (0.4%), 2009/10 (4.8%), 2010/11 (0.2%). This year we deployed 400 sequentially numbered tags on fur seal young of the year in order to continue this demographic monitoring.
10. On 24 February we completed our fourteenth weekly Cape-wide phocid census. We counted 45 southern elephant seals, 12 Weddell seals, and 7 leopard seals.
11. As of 29 February we have recorded 481 sightings of 41 tagged leopard seals. We have recorded an additional 92 sightings of untagged or otherwise unidentified seals which have been added to our photo-identification database. Twenty-five of the 41 tagged seals returned from previous years and the other sixteen we have tagged this year.



12. On 23 February we deployed our 10<sup>th</sup> and last GLS (geo-location sensor) tag on adult female leopard seals. The tags will be deployed all winter, and recovered when the animals return to the cape next summer to extend our data set on over-winter dispersal.
13. Now that we are on board and have access to running water we will work to process the entire season's sample of fur seal scats before getting to port in Punta Arenas on 12 March.

### Weather

For the week ending on 26 February winds averaged 7.7 mph with a maximum of 29 mph. The predominant wind direction was east (40.2%). The average temperature was 0.3° C with a low of -3.7° C. Mean daily solar radiation was 10,768 Wm<sup>2</sup>.

### Camp

In the week prior to the *L.M. Gould* arriving, along with our remaining research tasks, we worked tirelessly to clean, inventory, and prepare camp for the winter including the transfer of all the gear leaving the island from the camp to the landing beach.

Doug



Presented by Doug Krause and McKenzie Mudge, with assistance from Kevin Pietrzak, Jay Wright, and Nicole Cook at the Cape Shirreff Field Camp, Livingston Island, South Shetland Islands, Antarctica

